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Comments: *From the SCS Chief*

Conservation Education—A Key Step in Natural Resource Conservation

The Soil Conservation Service joins hands with others—conservation districts, other natural resource agencies, teachers, teacher trainers, and conservation organizations for youths and adults—in conservation education.

Our efforts are aimed at building a conservation-minded society that understands that its actions have far-reaching effects on soil and water resources for future generations.

Also, we want to encourage people to use their knowledge in making decisions that will enhance soil, water, and other natural resources—in their back yards, on their farms and ranches, in their counties, in their States, and throughout the Nation and the world.

Achieving such far-reaching goals begins by taking one step at a time. Over time, and through close cooperation, SCS and the National Association of Conservation Districts (NACD) have taken impressive steps forward in promoting conservation education for people of all ages.

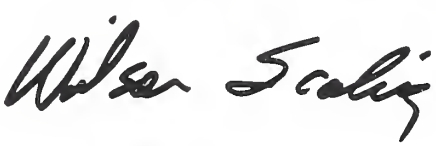
Within the last few months, SCS has assigned a full-time education coordinator to NACD. This person works under the general direction of the NACD Education and Youth Committee and with NACD's director of communications and other staff.

The main objective of the coordinator is to encourage districts to strengthen their conservation education efforts. One way is by providing districts with good ideas and techniques they can use in planning and carrying out a conservation education program.

Already in place is a data bank called the Library of Good Ideas that districts can access through NACD to learn what others are doing in activities such as fund raising, outdoor classrooms, field days, teacher workshops, and district youth boards. The data bank also includes information on how districts are using volunteers. Volunteers can be a tremendous asset in expanding district conservation education programs.

The education coordinator will also work with State soil conservation agencies, State departments of education, the Cooperative Extension Service, and others to promote conservation education activities in their programs and foster cooperation among them. Let's help them all be successful.

Just as we teach children to read and write, we must also teach them to be responsible stewards of natural resources. Both are too important to be left to chance.



Cover: At the 1985 Boy Scout Jamboree, Soil Conservation Service National Cultural Resources Specialist Diane Gelburd points to remains of animals used by the Algonquin Indians and discusses past use of the land. See article on pages 6–7. (Photo by Tim McCabe, former photographer, SCS, Washington, DC.)

John R. Block
Secretary of Agriculture

Wilson Scaling, Chief
Soil Conservation Service

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Conservation Education

Conservation Education Award Winners

The National Association of Conservation Districts (NACD) and Deutz–Allis Corporation have announced the winners of their 1985 Conservation Education Awards Program. The program is open each year to full-time teachers in grades K-12 in the United States and its territories and to the Nation's 2,950 soil and water conservation districts. The purpose of the contest is to emphasize the value of conservation education in the schools and to recognize the most outstanding conservation education programs developed by teachers and conservation districts across the Nation.

Winning Teachers

Teacher-of-the-Year winner is Jim Rowley from Centerville High School in Centerville, Ohio. Rowley was cited by the judges for his humanistic approach to conservation education. "Progress toward solving even the biggest of problems can be made if you are willing to break the problem down into smaller, more manageable tasks," Rowley says. "If you are concerned about conservation education, you can volunteer to work with children in your own community. You may not be able to personally solve the soil erosion problem, but you can study its implications and become educated as to modern soil conservation practices. You may not be able to solve the food problem in Ethiopia, but you can make a difference in the life of one Ethiopian child."

Through research into the evolution of the African famine, for example, his students' interest and excitement generated citywide fundraising efforts last year which resulted in a $10,000 contribution to the Red Cross for its African Famine Relief Program.

Through Rowley's classes—attended last year by 250 senior students, or 45 percent of the graduating class—young people have raised money to purchase computer equipment for the school's Environmental Studies Center. Volunteer naturalists from his classes have guided more than 500 elementary students through district parks in the last 2 years, and other student volunteers have been assistant naturalists for the township park district's day camp.

The Wilderness Horizons Club, which Rowley sponsors at Centerville High, is a "study, travel, and service club concerned with those places that have escaped the impact of humans and their increasingly urbanized and industrialized world," he explains. "Club members will be introduced to backpacking, canoeing, and cross country skiing as means of exploring primitive areas." "No Trace" and minimum impact camping skills are emphasized, and members also participate in the planning and implementation of conservation projects in the Centerville-Washington Township area.

Jim Rowley's nomination was sponsored by the Montgomery County Soil and Water Conservation District, Trotwood, Ohio. He will receive $1,000 and an all-expense paid trip to the 1985 NACD National Convention in February in Nashville, Tenn.

Second-place honors went to third-grade team-teachers Jan Wieting and Larry Nelson of Gearhart Elementary School in Gearhart, Oreg., for their imaginative program.

A striking 40-foot wall mural, planned and painted by their students, stands outsi... classroom, forming the background for a woodsy area of seedlings, flowers, and bushes planted by the students.

Inside the classroom as well, Jan Wieting and Larry Nelson's active imaginations and talent for innovation have made learning a friendly adventure. As an incentive to participation, the team has embraced the "sunship Earth" concept, which portrays Earth as a spaceship carrying passengers and crewmembers. Through their experiences in and outside the classroom, the children work enthusiastically toward the goal of becoming full-fledged members of the sunship crew. It's not hard to stay interested when mysterious backpacks appear, as they sometimes do, carrying information and assignments from "Sunship Earth Headquarters"—including, in one instance, a tape recording selecting the class to do an important study and detailing the children's responsibilities.

The sunship casts its spell into every corner of the classroom. One year-long writing project is the Sunship Earth Encyclopedia, a book that continues to grow throughout the year as the children research and compose new entries for it. A Sunship Earth News Board in each classroom is the focus for a collection of current events in conservation, which raises many subjects for discussion and activities.

Wieting and Nelson were nominated by

Award-winning teacher Jim Rowley totally developed the Centerville, Ohio, High School Environmental Studies Program. He sponsors the school's Wilderness Horizons Club whose members help plan and implement conservation projects in the Centerville-Washington Township area.

the Clatsop Soil and Water Conservation District, Astoria, Oreg. They will receive a $500 cash award during NACD's National Convention.

Regional winners in the conservation teacher category are: Northern Plains region, Ann Danner, Tara Heights Elementary, Papillon, Nebr.; South Central region, Joe Borland, Grant High School, Dry Prong, La.; Southeastern region, Dianne Bradshaw Hefner, Newton Conover Middle School, Newton, N.C.; Southwestern region, Kirk Goble, Alamosa High School, Alamosa, Colo.; and Northeastern region, Julian Kane, Garden City Senior High School, Garden City, N.Y.

Winning Districts

Cambria County Conservation District in Ebensburg, Pa., won First Place in the NACD/Deutz–Allis Conservation Education Awards Program. "Something for every school" in their county's 13 school districts is their motto. Trees for Arbor Day planting on school and strip mine areas, poster and essay contests, construction of outdoor study areas, a lending kit of library materials, newsletters, and teacher education workshops are all part of the strong program.

Full-time educational coordinator, Joseph Emerick, works with a 10-member education committee. One enthusiastic teacher commented, "The district's school programs provide hands-on opportunities to see and work with nature. This instills an attitude in the students that they can have an effect on the environment and not just read about it."

The district maintains its own hiking trail and outdoor learning center. And each year a trail and outdoor learning center are constructed at a selected county school. A complete inventory is made of the plants, wildlife, and soil at the site. Then a fall workshop is held for teachers to show them the potential of the new facility. A summer work crew hired by the district helps keep the areas in top-notch shape. And more than 200 county educators receive updated information in the monthly district environmental education newsletter.

In 1984, the district education coordinator worked with the biology department of a local high school to develop an intensive 6-week course for three classes in environmental education. To reach younger students, the district is revising the Minnesota "Ag–Stravaganza" program for students in K-6. In a special Junior Conservationist program, the district leads a 1-week environmental education program for students in grades 4-6. In addition, its coordinator reaches out to youth groups, ecology clubs, and other organizations interested in projects or presentations.

The Douglas County Conservation District from Lawrence, Kans., has won Second Place honors in the NACD/Deutz–Allis Conservation Education Awards Program.

An impressive 10-page supplement to the *Lawrence Journal World* newspaper in Lawrence, Kans., typifies the district's commitment to a strong, dynamic conservation education program. Featuring district winners in the Douglas County conservation contest, the supplement details a wide range of programs designed to interest and inspire local communities. It outlines the resource stewardship projects of the three winning families, and introduces the resources available through the district.

"Educational Efforts Transcend Classroom," the headline exclaims, describing Douglas County Conservation District's outdoor environmental education program. Developed at a local lake in cooperation with the U.S. Army Corps of Engineers, the project provides specific instructional opportunities for students in kindergarten through the sixth grade. It features a nature discovery trail, along with a presentation on dam construction and safety, while puppet shows, games, and hikes appeal to the younger children and illustrate the fundamentals of conservation.

The outdoor classroom experience complements a wide range of structured classroom activities presented to approximately 500 students and teachers at six schools throughout the system. Students participate in discussion sessions and slide shows, and a scale model conservation farm is available for investigation. Poster and limerick contests are additional incentives to learning conservation practices for elementary youngsters, while speech contests and career day presentations are designed to appeal to high school students.

A university volunteer program at the University of Kansas has been enormously successful, providing an unusual approach to conservation: students attending the university receive credit while doing volunteer work for the district. A 5-minute radio tape written and produced by a university volunteer was played on three local radio stations, for example, while another volunteer is earning credits through the Remote Sensing Department by developing a land cover map of the county from a Landsat image. And graduate-level seminars are conducted for natural resources planning and design classes, where topics for discussion may include conservation planning and application, use of soil surveys in the design process, sediment damages, and organized watersheds.

The two winning districts will be recognized at NACD's annual convention.

Other regional winners are: Pacific region, Gem Soil and Water Conservation District, Emmett, Idaho; Southwestern region, Carlsbad Soil and Water Conservation District, Carlsbad, N. Mex.; North Central region, Licking County Soil and Water Conservation District, Newark, Ohio; South Central region, Pittsburg County Conservation District, McAlester, Okla.; and Southeastern region, Warren Soil Conservation District, McMinnville, Tenn.

Ann Cole,
director of communications, National Association of Conservation Districts, Washington, DC

Learning Activities Spring From Pennsylvania Farm

Tayamentasachta meant "never-ending waters" to the Delaware Indians. Today, it could mean "never-ending activities."

Tayamentasachta is a 60-acre farm near Greencastle, Pa., that was named for its bountiful spring. Since 1966, this farm has been owned and operated by the local school district as the Tayamentasachta Center for Environmental Studies.

The center provides a variety of activities for the community and enjoys widespread

support. Activities range from environmental education courses to special community celebrations. Approximately 10,000 people participate in activities each year.

For teaching about the environment, the center has a woodlot, grasslands, areas for demonstrating strip farming and experimenting with plants, wildlife areas, a tree and shrub nursery, a walnut plantation, a colonial kitchen garden, and a weather station.

The spring itself provides a pond with 500 to 1,000 gallons of water per minute. The pond is used for aquatic studies and serves as a trout nursery. In a project sponsored by an association of local sportsmen, students each year raise about 4,000 trout for release in local streams. The pond also has nesting boxes for waterfowl.

Farm buildings include a mansion built in 1820 that contains a craft room, an ecology laboratory, a classroom, restored period rooms, and a natural and cultural history museum. A large brick and frame barn contains a workshop, toolshed, and storage area. The barn bays are used for large group activities.

The building complex also includes a Pennsylvania Dutch oven and smokehouse and a log cabin that was built by students to demonstrate early American domestic life. A windmill and a waterwheel were donated to the center to demonstrate alternative forms of energy.

About 4 miles of trails meander across the farm. One section of this trail system is a self-guided nature tour. Walkers, joggers, and high school cross-country runners regularly use the trails.

The center is used to teach students from kindergarten through the 12th grade about the environment. Educational activities are interdisciplinary and include instruction in science, math, English, social studies, home economics, art, vocational training, and other subjects. Regular classroom teachers are assisted in these activities by parent volunteers, high school students, and student aides. Government agencies such as the Soil Conservation Service provide additional assistance and expertise.

Many groups from the surrounding area —such as the Boy Scouts and Girl Scouts— use the center for various activities throughout the year. Nearby Shippensburg University uses the center to introduce graduate and undergraduate students to environmental education. Student teachers from the university are assigned to the center to gain experience teaching environmental education. The center also offers inservice training to teachers, administrators, and community leaders in environmental education, energy conservation, and the development of environmental curriculum and school sites.

Senior citizens from Chambersburg, Waynesboro, Greencastle, Fort Loudon, and Mennohaven use the center for programs such as the annual Apple Butter Day. On this day, fifth-grade students are teamed with senior citizens to learn how to plant apple trees and make apple butter, apple cider, and corn husk dolls. The children also learn to appreciate relationships with older people.

On one of their visits to the center, kindergarten and elementary students are given flower seeds to plant and grow in their classrooms. When the flowers are ready to be planted outside, they are returned to the center where the students plant them in flower gardens.

Other special events at the center include the Cumberland Life Festival, in which eighth-grade students demonstrate early American life styles for 2 days in May. To prepare for the festival, the students begin researching their projects in February.

During December, the center hosts an early American Christmas that is open to the public. Senior citizens decorate the outside of the house for this event, and elementary and secondary art students decorate the interior. A high school choir sings carols.

Every 3 years, the community of Greencastle hosts Old Home Week. Present and former citizens get together during this week to remember past experiences and participate in dances, pageants, parades, concerts, competitions, and good fellowship. One day of the week is set aside for local craft persons to share their skills with the community.

The center is owned by the Greencastle-Antrim School District, and programs at the center are directed by a 15-member committee consisting of local community leaders, school administrators, school board members, teachers, students, and representatives from government agencies such as SCS. Committee members help host workshops and the special events.

Tayamentasachta is listed by the U.S. Department of the Interior on the National Register of Historic Places for its significance in American history, architecture, and cultural heritage.

Frederick E. Bubb,
public affairs specialist, SCS, Harrisburg, Pa.

The "never-ending spring" at Tayamentasachta Center for Environmental Studies near Greencastle, Pa., feeds a pond and trout raceways. Several alternative energy sources are displayed at the center, including a water wheel. The pond is stocked with fish and is heavily used by ducks and other wildlife.

Scouts and Conservation—The 1985 Jamboree

The 11th National Boy Scout Jamboree held at Fort A. P. Hill, near Fredericksburg, Va., July 24-30, 1985, was the site for some inspiring conservation demonstrations and hands-on activities. The Soil Conservation Service and the Hanover-Caroline Soil and Water Conservation District (SWCD) reached thousands of active, concerned boys with their resource conservation message.

One major exhibit at the jamboree was the Conservation Learning Trail which led to the Conservation Area. Small groups of the nearly 11,000 scouts who visited the Conservation Area first toured one of four trails with a professional conservationist. The trails had the same six stops set up along each. Each stop was designed to send a different environmental conservation message. The SCS stop stressed the interdependence of natural energy, air, soil, and water resources.

One scout, Paul Ellingstad from Vermillion, S.C., said of the Conservation Trail, "I learned a lot. It made me appreciate the environment and be more aware of conserving it. Of everything I've done here, I liked the Conservation Trail best."

The Conservation Trail led to the Conservation Demonstration Area with 22 exhibits by resource conservation agencies and organizations.

The 2-acre SCS "Conservation Is Your Future" exhibit was a favorite of scouts and adults. Each of the exhibit's nine stations related to conservation practices that scouts could adapt for use in their own communities.

Exhibits showed how and why soil erosion occurs, how it affects the environment, and what can be done to control it. Runoff boxes were used to demonstrate how vegetative cover can reduce soil loss. Scouts also learned how certain soils are suitable for some land uses and unsuitable for others.

Scouts and visitors walked through a conservation vegetable garden to look at conservation practices such as mulching, contour farming, grassed waterways, and conservation tillage. Wildlife plantings and habitat were also discussed.

Scouts were surprised to see a coastal sand dune in the woods. They learned how dunes are damaged by human activities and how certain plants can be used to stabilize shifting dune sands. Samples of these plants had been planted on the dune and labeled. Many scouts said the station inspired them to plan projects to save the dunes back home.

After looking at five soil monoliths representing local soils and discussing how soil is formed from bedrock, scouts moved to a station where they built their own soil profile in a 6-inch plastic tube. The scouts carefully tamped small amounts of bedrock, parent material, subsoil, and topsoil into the tubes and sealed them. The mini-soil profiles that scouts took home will remind them of the conservation exhibits and what they learned about protecting natural resources.

From the soil tables, scouts walked to a

At left, Norman Wilson, SCS State forester in Richmond, Va., talks to scouts and visitors at the 1985 National Boy Scout Jamboree at Fort A. P. Hill about a model of an archeological site and what it reveals about the farming practices of American Indians 600 years ago.
Above, an SCS display shows plants that can stabilize dunes.

Photo, left, by Tim McCabe, former photographer, SCS, Washington, DC.

Photo, above, by Helen Jeter, public affairs specialist, SCS, Richmond, Va.

model of an archeological site. A guide discussed conservation practices of the American Indians in the 14th century. Scouts learned that long before the colonists settled here, Indians had practiced crop rotation to rest fields, restore soil nutrients, and prevent soil erosion.

Two model homes showed the contrast between the effects of good and bad resource management. The conservation homeowner had used simple and inexpensive conservation techniques and plantings to develop a pleasant environment and attract wildlife. The homesite had good grass cover, a diversion to prevent rainwater from entering the basement, and tile to take water from the downspout away from the house to a rock-lined pool.

On the other hand, the neglected homesite was identified by scouts as an environmental problem. A cracked house foundation, damaged shrubs, bare spots in the lawn, and effluent in a septic drain field placed in an unsuitable soil showed poor management of resources.

At the "rap area" scouts and visitors could talk with SCS personnel about the exhibits and use soil augers, probes, levels, and other tools used by SCS field staff.

Many of the more than 20,000 scouts and visitors who toured the Conservation Demonstration Area headed toward the Merit Badge Midway where nearly 100 booths featured skill and merit badges. SCS and the Hanover-Caroline SWCD sponsored two booths on the midway where they demonstrated principles of soil and water conservation.

At the booths scouts could get information on the types of projects and careers they could choose in resource conservation. Also, more than 90 scouts completed all of the requirements for the Soil and Water Conservation Merit Badge and almost 1,000 completed some of the requirements.

The Hanover-Caroline SWCD offered an extra incentive to scouts studying soil and water conservation. If a jamboree scout had his local conservation district certify that he earned the Soil and Water Conservation Merit Badge and completed one of the special projects listed on an SWCD brochure, the district provided a special conservation patch designed for the 1985 jamboree.

Edwin Weaver, a retired SCS district conservationist from Bloomsburg, Pa., traveled 270 miles to volunteer to help SCS and the SWCD with its jamboree exhibits. Said Weaver, "I feel that working with youth is the most important part of the SCS program because young people are our tomorrow."

Helen S. Jeter,
public affairs specialist, SCS, Richmond, Va.

Steve Hawks, information officer with the Division of Soil and Water Conservation of the Virginia Department of Conservation and Historic Resources, uses models to show scouts how conservation measures can reduce runoff and soil erosion.

Photo by Tim McCabe,
former photographer, SCS,
Washington, DC.

Scouts make mini-soil profiles to reinforce what they learned about soil formation.

Photo by Helen Jeter,
public affairs specialist,
SCS, Richmond, Va.

Students Study Native Use of Resources

"I wouldn't have wanted to live in those days—it was hard work to make arrowheads." This was the conclusion of one youngster after studying the Anasazi culture of 600 years ago in southwest Colorado.

The art of making arrowheads was just one of many aspects of the Anasazi culture studied last year by 7- to 11-year-old students at the Needham Elementary School in Durango, Colo. In a project sponsored by the Durango Resource Conservation and Development Area, approximately 100 students set out to learn all they could about the Anasazis—a people who once lived in the same area where the students live today.

The project began when each student in an independent study program at the school chose a different culture from around the world to study. One student chose the culture of the cliff-dwelling Anasazis. Other students in the program soon became interested in the Anasazis, and the project continued to grow until it included the second through fifth grades.

To provide the students with background information, an archaeologist from USDA's Forest Service came to the school and explained the purpose of archaeological digs, the methods of dating artifacts, and the history of the Anasazis. The students were then taken on a field trip to a place where an archaeological dig had taken place in years past. They got a feeling for life as it existed in the past by seeing not only pots and buildings but also human remains right under their feet.

"What is this?" one student asked, picking up a small object.

"It's a finger bone," explained the archaeologist.

"Do you mean people are buried right here?" another student asked incredulously.

In a later classroom session, archaeologists from Ft. Lewis College and the city of Durango described the stonework that the Anasazis developed over several hundred years. The students learned how the Anasazis carried stones from nearby canyon edges to build walls and how they split logs with stone axes to place on the roofs.

One student asked why small stones were pushed in between the larger ones. An archaeologist explained that this technique provided a stronger mortar than just plain mud.

During National Wildlife Week in March 1985, the local staff of the Soil Conservation Service discussed the soils, plants, and animals of the area with the students and described how the Anasazis used these resources. The students learned how the Anasazis converted the best soils from grassland to cropland and built diversions to carry water to nearby fields.

The students then visited a zoo to see the animals and habitats they had been told about. Many had studied such things as the differences between carnivorous, omnivorous, and herbivorous animals and the differences between terrestrial and aquatic habitats.

After a special permit was obtained from the Forest Service, the students were given a guided tour of the Anasazi pithouse ruins at Chimney Rock. There they were able to see the stonework they had been learning about.

The students studied how farming was done by hand instead of modern machines. The Anasazis used stones on sticks to make planting easier. Clay pots were used to store seeds and carry water.

The Anasazis dammed the small drainage areas and creeks at every flat point to store as much water as possible. When these areas went dry, they had to carry water 3 to 4 miles from the nearest river.

Later in the school year, an SCS archaeologist demonstrated the use of tools made of stone and antlers. The students also learned about the care of the tools and how Native Americans depended on them.

A large piece of black obsidian was broken apart to show the students how the Anasazis made spear points. The larger pieces of obsidian were used to make spear points; the pieces under about 6 grams were used to make arrowheads.

The students learned that the Anasazis eventually abandoned southwest Colorado possibly because of a drought that lasted several years.

Noel Wellborn,
RC&D coordinator, SCS, Durango, Colo.

Students from the Needham Elementary School in Durango, Colo., view Anasazi ruins at Mesa Verde National Monument, Cortez, Colo.

California Holds Its First Range Camp for Youth

Nine high school students from around California learned about range management at the State's first range camp for youth last June. The week-long camp was held at the University of California's Elkus 4-H Ranch near Half Moon Bay, south of San Francisco.

The participants were sponsored by seven resource conservation districts (RCD's): San Mateo County, Yolo County, Florin, Mojave Desert, Mariposa County, Fall River, and Santa Maria Valley. Some students had scholarships from Future Farmers of America chapters and 4-H clubs.

The California Section of the Society for Range Management, the California Association of Resource Conservation Districts, and the 4-H Cooperative Extension Service sponsored the event. Warren Peden, Soil Conservation Service State range conservationist in Davis, Calif., organized the range camp. Peden said that he knew how valuable the camps could be from his experience with SCS in Nebraska.

Campers spent most mornings indoors in formal instruction and spent afternoons in the field. They spent a day on an operating ranch, and a morning with a local rancher who visited the group to talk about the economics of ranching and how it affects decisionmaking. A range consultant talked to the campers about grazing systems.

Campers earned points based on an end-of-camp exam, plant identification contest, and a camp staff appraisal. While all campers received certificates of completion, the two with the most points—Mary Kimball of Woodland and Thomas Tilton, Jr., of Mariposa—received special certificates of merit and belt buckles. Kimball, the leading camper, also received a $50 U.S. Savings Bond from the San Mateo County RCD.

"Our main goal is to educate young people on the importance of the State's range resource and its proper management," Peden said. "Even if they don't pursue careers in agriculture, campers will at least have a better understanding of how rangeland and other resources must be carefully managed."

Camp instruction included range history in California, plant identification, range cattle and sheep production, range wildlife, ranch planning and operation, water development, fencing, prescribed fires, forest grazing, range management on public lands, and careers in range management.

Instructors were from the University of California's Berkeley and Davis campuses, the U.S. Department of Agriculture's Forest Service and Soil Conservation Service, and the California State Department of Forestry. Cooperative Extension farm advisors and Half Moon Bay rancher Pat Rookus also helped with instruction.

Another California range camp for youth is scheduled for July 7–11, 1986. Close to 30 young people are expected to attend.

Herb Nesmith,
public affairs specialist, SCS, Davis, Calif.

Permanent Soil Pits Help Students With Soil Identification

Some people recycle paper; some return bottles and cans. Now the Soil Conservation Service field office and the conservation district serving Grafton County, N.H., have found another reusable resource: soil pits.

When vocational agriculture students at Woodsville High School needed a place to train for soil judging events, teacher-coach Brian Van Gilder asked the local SCS and district office for site recommendations. SCS District Conservationist W. Michael Dannehy contacted the Grafton County Farm, and farm officials agreed to let the students use their property to establish permanent soil pits.

The county-operated farm is a cooperator with the conservation district and follows a conservation plan. The operation—dairy, small vegetables, and hogs—provides a significant part of the food needs for both the county-run prison and nursing home.

Dannehy and SCS Soil Scientist Kenneth E. Harward guided the vo-ag students as they opened two soil pits in a wooded area of the farm. Harward provided details on the soil conditions at the sites.

Not long afterward the high schoolers opened other pits and served as guides for a conservation field day for fifth-grade students countywide. The vo-ag group dug student-size pits and set up stations for natural resource professionals to make presentations. The stations were staffed by Cooperative Extension, State Forestry, and SCS specialists.

"This made a good practical exercise in soils identification for the students who also are on the vo-ag soil judging team," Dannehy said.

The permanent pits were used in another field day, this one directed at professionals, town officials, and others interested in septic systems. In addition to the dug pits, this program used an open cut in a hillside left from gravel mining. Harward and a representative of the New Hampshire Water Supply and Pollution Control Board presented the educational program for this event.

Pits located near the farm buildings or in areas likely to be used for cattle grazing were filled in. Pits intentionally left open—for practice sessions by the vo-ag team and for future use—were modified with a ramp at one end to allow easy entry and exit. These pits are only about 4 feet deep, as opposed to the 10-foot depth generally used in soils work.

The sides of the pits held firm and by late fall undergrowth had grown up near the demonstration site. One pit, in a wet area, was partially refilled. The other is ready for soil judging as soon as snow melts in spring.

The Grafton County Conservation District, which sponsored the field days, already is preparing to hold similar events in 1986.

Dottie Laber,
public affairs specialist, SCS, Durham, N.H.

Youth Board Develops Conservation Study Area

The Pittsburg County Conservation District Youth Board in Oklahoma is developing 20 acres of rural agricultural land into an outdoor classroom to be used by local schools and other groups to study resource conservation, wildlife, biology, and other subjects.

James Murrin, father of youth board member Robert Murrin, donated use of the land to the board.

Soil Conservation Service staff at the McAlester field office and Mike Mass, district manager and youth board advisor, are helping the board's 10 high school students to develop and apply a plan for managing and improving the 20-acre area.

The youth board has applied for and received funds from several sources. For example, through its nongame program, the Oklahoma Department of Wildlife Conservation awarded the group a grant of $400. The grant money was used to pay for fencing part of the area for wildlife and constructing several bird, squirrel, and wood duck houses.

Another part of the plan is the reclamation of an old gas well site. The area was left bare, and erosion had carved a large gully. To stabilize the gully, a local contractor donated his services to build a small earthen dam with a pipe through it. The area was then shaped and seeded.

This project not only stops the gully from eating back into a hill on the site but also demonstrates a common conservation practice for reclaiming damaged areas.

Local Cub Scouts helped to plant three rows of trees to form a windbreak on the study area. Just south of the windbreak the youth board plans to measure off a 1-acre plot. "Most people don't know just how big an acre is, and this plot will be used to give them a better idea of the size," said Robert Murrin.

"We also intend to install a freeze-proof tank behind the existing farm pond, set up a plant identification site, display old farm equipment which was used to farm this area 50 years ago, and develop other areas that teachers can use with their classes," said Murrin.

The purpose of the freeze-proof tank is to provide a continuous source of water for livestock in winter. The water is kept from freezing by the combination of special design, partial burial of the tank, and continuous flow of water. Livestock owners will be able to see a freeze-proof tank in operation at the conservation study area.

"This project is teaching the youth board a lot about caring for the land, and hundreds of students and adults will benefit from their work," said Mike Mass.

The National Association of Conservation Districts has named the Pittsburg County Conservation District Youth Board winner of the 1985 youth board contest. The board is being honored for its work on the conservation area and other activities to promote the wise use of our natural resources.

F. Dwain Phillips,
public affairs specialist, SCS, Stillwater, Okla.

At left, Pittsburg County Conservation District youth board members, Mike Shropshire (left) and Dorothy Atkins, work on fence around the wildlife habitat area that the board developed under the guidance of District Manager Mike Mass (right).
At right, youth board members, Robert Murrin and Cynthia Bernardi install a blue bird box.

Videotape Saves Speaker's Day

Sometimes the best way to learn about a new technology is to go back to school. All it took for me to appreciate the potential uses of videotape was a trip back to the eighth grade and a sore throat.

In my role as district conservationist for the Soil Conservation Service, I often get the opportunity to speak to groups in and around Glendive, Mont. Not only is this part of my job, but I sincerely believe in soil conservation and enjoy telling others—particularly young people—about it.

One day during National Wildlife Week last year, I was scheduled to give six 45-minute presentations to the eighth-graders at the local Washington School. This was a fairly big order, but I thought I could accomplish it simply by giving the same presentation six times.

For each group of students, I planned to show the slide show "Limits" by SCS and then talk and show slides about local resource and erosion problems. This would be followed by a question-and-answer period.

What I hadn't planned on was a sore throat. My throat was so sore on that day that it soon became clear that my voice would not last for all six presentations.

After hearing me struggle through the first presentation, Mrs. Verna Carpenter, the eighth-grade science teacher, suggested that we use the school's videotaping equipment to tape the next presentation for showing to the rest of the classes. Mrs. Carpenter, whose husband is a farmer, had planned a week of school activities on the theme "Soil: We Can't Grow Without It" and was determined to carry it out.

We decided to give it a try. I mustered up what little voice I had left and gave the best presentation I could in front of the video camera for the second group of students. The video tape of this presentation was then played for the four remaining classes. I still helped with the slides, but saved my voice for the question-and-answer periods at the end of the video presentations.

In all, about 165 students saw the presentation—either live or on tape—that day. And, judging by the many enthusiastic questions the students asked, they paid as much attention to the video version as they did to my live performance.

So, if you ask me, there are a lot of potential uses for videotape. It may not cure your sore throat, but it can lighten your speaking load. I learned this in school the other day.

Mike Carlson,
district conservationist, SCS, Glendive, Mont.

Flood-Control Lake Fosters Nature Center

One project often leads to another. In Bucks County, Pa., a new lake led to a new park, which led to a new nature center that attracts 28,000 people a year.

A decade ago, the Peace Valley Nature Center was little more than an empty dog kennel. Today it is the center of an extensive environmental education program on the shores of Lake Galena.

The construction of Lake Galena was a cooperative project cost shared by the Soil Conservation Service through the Watershed Protection and Flood Prevention Act, Public Law–566. This 365-acre lake was designed primarily for flood control on the north branch of Neshaminy Creek. The project included development of recreational facilities in the 1,500-acre Peace Valley Park surrounding the lake.

While SCS and the County Parks and Recreation Department were working on the basic recreational facilities, the county commissioners decided to set aside 300 acres of the park for a nature center. Included were 20 acres of the lake for aquatic studies. The nature center and the park were tied together by a land management conservation plan that requires the cooperative efforts of local, State, and Federal agencies.

Carolyn Jarin, who was already living in the park, saw opportunities to develop an environmental education program. The success of her early efforts convinced the county commissioners to hire her under the Comprehensive Employment and Training Act (CETA) as a park naturalist. They gave her a small budget that led to an expansion of the nature center.

In the early years, the nature center operated out of the converted dog kennel. In 1980, the county received a matching-funds grant of $36,000 from the U.S. Department of Energy for a new solar addition. As the local contribution, the Parks and Recreation Department provided the labor to build the addition. It is used to demonstrate solar energy and includes a 1,200-square-foot meeting, observation, and exhibit room; a greenhouse; and a waterless toilet.

Programs at the center include environmental education for all 4th and 10th graders in the Central Bucks School District's science curriculum; bird observation and nature walks; a course for training naturalist aides; classes for Scouts, 4–H groups, preschoolers, and adults; special programs for the visually, mentally, and physically handicapped; and seasonal "moon walks" and star watches.

Jarin runs the center with two assistant naturalists and 20 to 30 volunteers. The volunteers work about 6,500 hours per year.

Many of the volunteers are members of the Friends of Peace Valley Nature Center, Inc., a group organized in 1975 to supplement the staffing, funding, and programming at the center. This organization consists of about 400 family and individual members who raise about $28,000 a year to pay the salary of one assistant naturalist and buy educational materials and supplies.

Other organizations that contribute to and use the center include the Audubon Society, the Philadelphia Academy of Natural Sciences, the YWCA, the Bucks County Association of the Blind, the Buxmont Solar Energy Association, local garden clubs, and private schools.

Jarin has been recognized locally and statewide for her contributions in environmental education. She has been named "Employee of the Year" by the Parks and Recreation Department and "Outstanding Conservation Educator" by the Pennsylvania Association of Conservation District Directors. She has also received the "Conservation and Wildlife Award" from the Audubon Society.

David Tindall,
district conservationist, SCS, Doylestown, Pa.

New Publications

Reclamation Planning for Coal-Mined Lands: A Selective Bibliography

Compiled by Rolfe D. Mandel and M. Elizabeth Hines

The Surface Mining Control and Reclamation Act, signed into law in August 1977, charged the coal industry with the responsibility to "restore the land affected to a condition capable of supporting the uses which it was capable of supporting prior to any mining, or higher or better uses . . . ." This bibliography focuses on the literature which describes "the existing and evolving reclamation technology for coal-mined lands."

Divided into six sections it covers: general information, regional perspectives for land reclamation, revegetating mined lands, reclamation and land use, reclaiming lands for fish and wildlife, and innovative reclamation techniques. This 343-citation bibliography is comprehensively indexed by subject and keyword. Most of the entries were published between 1970 and 1984, with a few more recent articles cited.

Reclamation Planning for Coal-Mined Lands: A Selective Bibliography is available for $10 (plus $2 for postage and handling) from the Council of Planning Librarians, 1313 East 60th Street, Chicago, Ill. 60637–2897.

Geotechnical Engineering Techniques and Practices

by Roy E. Hunt

This practical guide was written for on-the-job civil engineers and construction professionals who need quick, reliable solutions to the common geotechnical problems of project planning and construction. It will help them to recognize, evaluate, analyze, and resolve problems —in both rock and soil—with a minimum of time and money. The author gives expert advice on methods for anticipating and avoiding problems, and he explains how to solve those that do arise quickly and efficiently.

Thorough discussions are devoted to such topics as the common causes of construction failures, geologic accidents, the hydraulic properties of ground water and seepage control methods, the strength of geologic materials and failure criteria, and soil interaction with foundations and retaining walls. Also discussed are such subjects as deformation in geologic materials, site planning and preparation, shallow and deep foundations on soils and on rock, slope and embankment stability problems and risks, surface retaining structures, and support and performance monitoring.

This 729-page publication is available for $59.95 from McGraw–Hill Book Company, 1221 Avenue of the Americas, New York, N.Y. 10020.

Save Soil Systematically—Resource Management Systems for Midwestern Cropland

by the Soil Conservation Service

"The topsoil of much midwestern cropland is eroding at alarming rates. If the fields of the Midwest are to continue to produce crops to help feed the Nation and the world, erosion on those fields must be reduced to a rate that will not damage their long-term productivity." So states the introduction to this pamphlet.

Erosion can be controlled with a resource management system—a combination of conservation practices and management designed to make productive use of soil and water resources. SCS can help individual farmers and landowners plan and develop a system for their farms.

A resource management system may be simple or it may be complex, a combination of many individual practices. It might include such conservation practices as conservation tillage, contouring, crop rotations, stripcropping, terraces, diversions, windbreaks, water- and sediment-control basins, drainage systems, cover crops, grassed waterways, and integrated pest management.

For a copy of this full-color illustrated booklet (Program Aid 1366) or for more information on planning a resource management system, contact the local office of the Soil Conservation Service.

An Environmental Agenda for the Future

Edited by Robert Cahn

The authors of this book, all chief executive officers of some of America's leading environmental and conservation organizations, analyze in detail the most important environmental problems facing the world today. The problems the authors believe we should be concerned with are nuclear proliferation, population growth, energy strategies, private lands and agriculture, water resources, toxics and pollution control, wild living resources, public lands, protected land systems, urban environment, and international responsibilities.

Each problem is analyzed and then the authors give their strong policy recommendations for the changes needed to bring about a healthier, safer, more productive living environment now and in the future.

This 155-page paperback book is available for $5.95 from Island Press, Suite 300, 1718 Connecticut Avenue, NW., Washington, DC 20009.

Elementary Soil and Water Engineering

by Glenn O. Schwab and Richard K. Frevert

This third edition, as in the first and second editions, has been written mainly for students in agriculture and related nonengineering fields at the college level. However, county Extension directors, contractors, farm managers, farmers, and others concerned with engineering problems on farmlands may find it a useful tool.

In addition to information on the design and layout of conservation practices, this book includes information on simple surveying and its application to field problems. Also included is information on surveying and the use of equipment; elementary hydrology; soil erosion control; water supply, structures, and storage on the farm; surface and subsurface drainage; irrigation; and watershed and farm planning. A list of references is given at the end of each chapter. Sample instrument survey field notes are given in applicable chapters to illustrate and to standardize the recording of data.

This 356-page text comes completely illustrated with graphs, charts, and photographs.

Elementary Soil and Water Engineering is available for $25.95 from John Wiley & Sons, Inc., One Wiley Drive, Somerset, N.J. 08873.

Recent Soil Surveys Published

by the Soil Conservation Service

Georgia: Washington and Wilkinson Counties.
Kansas: Clay County.
Nebraska: Cedar County and Valley County.
New Hampshire: Hillsborough County, West.
Pennsylvania: Warren and Forest Counties.
Texas: Johnson County.

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